

Notice of Allowability

Application No.

10/651,521

Applicant(s)

MAIN ET AL.

Examiner

Art Unit

Jeremy S. Cerullo

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed on 2 February 2006.
2. ☒ The allowed claim(s) is/are 2-5 and 7-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input checked="" type="checkbox"/> Other <u>PTO-413B</u> . |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Kempler on 14 February 2006.

The application has been amended as follows:

Claim 2 should appear as:

2. A computer system comprising:
 - a portable computer having a LPC bus for peripheral devices;
 - a docking station receiving the portable computer and peripheral devices;
 - a PCI_Express (Revision 1.0a) fabric coupling the portable computer to the docking station, the PCI_Express (Revision 1.0a) fabric communicating commands or data between the LPC bus and the peripheral devices; and
 - a hybrid PCI_Express (Revision 1.0a) downstream port coupled to the LPC bus and to a computer host for receiving PCI_Express (Revision 1.0a) packets and LPC commands or data for transmission along the PCI_Express (Revision 1.0a) fabric.

Claim 3 should appear as:

3. The computer system of Claim 2 further comprising a hybrid PCI_Express (Revision 1.0a) upstream port couplable to a peripheral device and receiving PCI_Express (Revision 1.0a) packets and LPC Transaction Packets from the PCI_Express (Revision 1.0a) fabric.

Claim 4 should appear as:

4. The computer system of Claim 2 wherein the hybrid PCI_Express (Revision 1.0a) downstream port receives a half-duplex LPC bus Transaction Packet and converts it to two full duplex PCI_Express (Revision 1.0a) packets for transmission on the PCI_Express (Revision 1.0a) fabric.

Claim 7 should appear as:

7. In a computer docking station to receive a portable computer and peripheral devices, a communications link between the portable computer and the peripheral devices comprising:

a PCI_Express (Revision 1.0a) fabric couplable to the portable computer and at least one of the peripheral devices, the PCI_Express (Revision 1.0a) fabric communicating commands or data between a computer in the docking station and a peripheral device connected thereto; and

a hybrid PCI_Express (Revision 1.0a) downstream port couplable to an LPC bus of a computer and to a computer host for receiving PCI_Express

(Revision 1.0a) packets and LPC Transaction Packets for transmission along the PCI_Express (Revision 1.0a) fabric.

Claim 8 should appear as:

8. The computer docking station of Claim 7 further comprising a hybrid PCI_Express (Revision 1.0a) upstream port couplable to a peripheral device and receiving LPC Transaction Packets from the PCI_Express (Revision 1.0a) fabric.

Claim 9 should appear as:

9. The computer docking station of Claim 7 wherein the hybrid PCI_Express (Revision 1.0a) downstream port receives a half-duplex LPC bus Transaction Packet and converts it to two full duplex PCI_Express (Revision 1.0a) packets for transmission on the PCI_Express (Revision 1.0a) fabric.

Claim 11 should appear as:

11. A modified PCI_Express (Revision 1.0a) fabric comprising:
a hybrid PCI_Express (Revision 1.0a) downstream port couplable to a computer LPC bus and to a computer host for receiving PCI_Express (Revision 1.0a) packets and LPC data or commands for transmission along the PCI_Express (Revision 1.0a) fabric; and
a hybrid PCI_Express (Revision 1.0a) upstream port couplable to a computer peripheral device and receiving PCI_Express (Revision 1.0a) packets

and packetized LPC data or commands from the PCI_Express (Revision 1.0a) fabric and separating out the LPC data or commands for use by the computer peripheral device.

Claim 12 should appear as:

12. The PCI_Express (Revision 1.0a) fabric of Claim 11 further comprising a PCI_Express (Revision 1.0a) coupled between the PCI_Express (Revision 1.0a) downstream port and the PCI_Express (Revision 1.0a) upstream port.

Claim 13 should appear as:

13. The PCI_Express (Revision 1.0a) fabric of Claim 11 wherein the hybrid PCI_Express (Revision 1.0a) downstream port receives a half-duplex LPC bus Transaction Packet and converts it to two full duplex PCI_Express (Revision 1.0a) packets for transmission on the PCI_Express (Revision 1.0a) fabric.

Claim 14 should appear as:

14. The PCI_Express (Revision 1.0a) fabric of Claim 13 further comprising a LPC packet manager which places a long wait sync clock signal on the LPC bus while awaiting a reply to a bi-directional LPC transaction data packet.

Claim 15 should appear as:

15. A method of coupling LPC bus Transaction Packets across a boundary between a portable computer and a docking station utilizing a PCI_Express (Revision 1.0a) fabric comprising:

controlling the data flow on the PCI_Express (Revision 1.0a) fabric to insert at a first location on the PCI_Express (Revision 1.0a) fabric PCI_Express (Revision 1.0a) packets corresponding to LPC Transaction Packets into unused portions of the PCI_Express (Revision 1.0a) traffic,

receiving PCI_Express (Revision 1.0a) packets at a second location on the PCI_Express (Revision 1.0a) fabric and extracting those packets corresponding to the LPC Transaction Packets; and

performing an LPC task.

Claim 16 should appear as:

16. The method of Claim 15 further comprising converting half-duplex LPC bus Transaction Packets into two full duplex PCI_Express (Revision 1.0a) packets for transmission on the PCI_Express (Revision 1.0a) fabric.

Claim 17 should appear as:

17. In a method of coupling an LPC bus across a boundary between a portable computer and a docking station, a method of sending serial IRQ or DMA requests from a peripheral device to a processor, comprising:

generating in an LPC slave coupled to the peripheral device a
PCI_Express (Revision 1.0a) upstream packet requesting a serial IRQ or DMA
request;

injecting the PCI_Express (Revision 1.0a) upstream packet in to a
PCI_Express (Revision 1.0a) fabric;

recovering the PCI_Express (Revision 1.0a) upstream packet in the
docking station; and

utilizing the recovered PCI_Express (Revision 1.0a) upstream packet to
generate sideband signals to an LPC controller.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance:

3. Claim 2 is considered to be allowable, particularly due to the limitation "...a hybrid PCI_Express downstream port coupled to the LPC bus and to a computer host for receiving PCI_Express packets and LPC commands or data for transmission along a PCI_Express fabric." This limitation distinguishes the invention from the prior art of record.

4. Claims 3-5 are considered to be allowable due to their dependence on Claim 2.

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5. Claim 7 is considered to be allowable, particularly due to the limitation "...a hybrid PCI_Express downstream port coupled to a LPC bus of a computer and to a computer host for receiving PCI_Express packets and LPC Transaction Packets for transmission along a PCI_Express fabric." This limitation distinguishes the invention from the prior art of record.

6. Claims 8-10 are considered to be allowable due to their dependence on Claim 7.

7. Claim 11 is considered to be allowable, particularly due to the limitation "...a hybrid PCI_Express downstream port coupled to a computer LPC bus and to a computer host for receiving PCI_Express packets and LPC data or commands for transmission along a PCI_Express fabric..." This limitation distinguishes the invention from the prior art of record.

8. Claims 12-14 are considered to be allowable due to their dependence upon Claim 11.

9. Claim 15 is considered to be allowable, particularly due to the limitation that the method comprises "...controlling the data flow on the PCI_Express fabric to insert at a first location on the PCI_Express fabric PCI_Express packets corresponding to LPC Transaction Packet[s] into unused portions of the PCI_Express traffic..." While prior art exists that makes it obvious to communicate with LPC data or commands over a PCI_Express fabric (See rejection of Claim 1 above), prior art has not been found that

teaches the specifics of controlling data flow on the PCI_Express fabric for inserting LPC Packets.

10. Claim 16 is considered to be allowable due to its dependence upon Claim 15.

11. Claim 17 is considered to be allowable, particularly due to the limitation that the method comprises "...generating in an LPC slave coupled to the peripheral device a PCI_Express upstream packet requesting a serial IRQ or DMA request..." While prior art exists that makes it obvious to communicate with LPC data or commands over a PCI_Express fabric (See rejection of Claim 1 above), prior art has not been found that teaches the specifics of generating PCI_Express packets in an LPC slave.

12. Claim 18 is considered to be allowable due to its dependence upon Claim 17.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy S. Cerullo whose telephone number is (571) 272-3634. The examiner can normally be reached on Monday - Thursday, 8:00-4:00; Alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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2/15/06